Vole.

I THINK NATURE should take note of a short article by Prof. Skeat in the number of *Notes and Queries* for September 16, wherein he points out that *vole* is corrupt Norwegian for field, and that therefore a water-vole is a water-field, a field-vole a field-field, and a bank-vole a bank-field.

Exeter. JAMES DALLAS.

THE INVESTIGATION OF THE MALARIAL PARASITE.

PENDING the arrival here of Major Ross and part of the Malaria Expedition connected with the Liverpool School of Tropical Diseases, which is expected about October 7, we may, from information already to hand, forecast some points in his report without in any way detracting from the interest with which it will be received.

In the issue of this journal for September 7 we recorded the fact that a species of Anopheles was found to be concerned in the transference of all the forms of malaria. In the barracks of Wilberforce, a suburb of Freetown, Sierra Leone, out of four hundred men there was a daily average of forty ill in hospital with all three forms of malaria. The place seems to have been infested with mosquitoes, but only the genus Anopheles was found, and of those examined one-third were found to contain zygotoblasts.

In searching for the haunts of the Anopheles larvæ the members of the expedition found them chiefly in small stagnant pools in which green algæ were growing. The larvæ appear to live upon this, for larvæ hatched from eggs did not grow unless they were given some of the algæ to feed upon. They infer that the conditions under which algæ will grow, namely, in stagnant puddles, are the same as those under which Anopheles larvæ will hatch out and thrive; the larvæ of Culex were found in every receptacle for stagnant water, even in old sardine tins. Stagnant puddles are only found during the rains on low-lying ground, and near a stream or spring, from which they can be replenished in the dry season. So far, only one experiment on the action of kerosene oil on larvæ has been reported; one drachm of the oil was poured on the surface of a pool of water of about a square yard in area, and all the Anopheles larvæ it contained were found dead after six hours.

Ross considers the Anopheles to be the genus concerned in propagating malaria, and seems to rely on being able to exterminate them from a locality to free it from the disease.

Koch (*Erster Bericht über die Thätigkeit der Malaria Expedition*, April 25 bis August 1, 1899) found *Culex pipiens* to be concerned in propagating malaria in Tuscany, but to a lesser extent than the Anopheles. The German Commission find that the parasite requires a temperature of 80° F. to develop in the mosquito, and it is only found in these insects during the summer months. At the commencement of the hot weather the mosquito draws the parasite with the blood from a patient who has a relapse. Human beings with the parasite in their blood they consider to be the connecting link during the nine months of the year when the temperature does not allow of the parasite developing in the mosquito; they think relapses can be stopped by the use of quinine; so by this means it would become possible to stamp out the disease.

It is evident we want a large series of observations made in different parts of the world, for, if the genus Culex can propagate the disease, it would be almost impossible to exterminate these if they breed wherever water lies. On the other hand, should relapses of fever be prevented by a proper use of quinine, malaria would not be stamped out in countries where the temperature is sufficiently high all the year round to allow the parasite to develop in the mosquito.

MR. PERCY S. PILCHER.

MANY of our readers who were acquainted with Mr. Percy S. Pilcher, and others who have only heard of him through his great enterprise and keenness in constructing and using aërial machines, will be very sorry to hear that his accident on Saturday last has proved fatal, and that he died at 2.40 on Monday morning.

Mr. Pilcher, during the last few years, had been making a considerable number of experiments with the object of constructing a soaring machine which would propel itself. The writer of this note was present at one of his trials in August 1897, at the time when he was at work in designing a small light engine for propelling his machine, and communicated to this journal an account (with illustrations from photographs) of his experiments on that occasion (NATURE, vol. lvi. p. 344).

Like his forerunner Otto Lilienthal, Mr. Pilcher has come to the same sad end, and now his name must be added to that already long list of pioneers in aërial navigation.

The experiments causing the fatality took place on Saturday last at Stanford Hall, the seat of Lord Braye, near Market Harborough.

We gather from the *Times* that after several ineffectual attempts to start, a signal was given about twenty minutes past four, and Mr. Pilcher rose slowly in the machine until he had travelled about 150 yards, and had risen to a height of about 50 feet or 60 feet. Then a sharp gust of wind came and the tail of the apparatus snapped. Instantly the machine turned completely over and fell to the earth with a terrible thud, Mr. Pilcher being underneath the wreckage. His devoted sister was one of the first to reach the scene of the accident. Mr. Adrian Verney-Cave, Mr. Everard Fielding, and Dr. Stuart, all friends and companions of Mr. Pilcher, removed him from the machine and found that he was unconscious. Raising his left leg it was discovered that it was fractured above the knee. Mr. Pilcher was carried to his room in the house, and Dr. Stuart and Dr. Nash carefully examined him, another surgeon being summoned by telegraph from Rugby.

W. J. S. L.

NOTES.

PROF. SIMON NEWCOMB has been elected president of the recently established Astronomical and Astrophysical Society of America. The secretary is Prof. G. C. Comstock.

THE seventh International Geographical Congress began a series of successful meetings on Wednesday, September 27, at Berlin. Papers have been read by, among others, the Prince of Monaco, on his Greenland Deep-sea Expedition, and Dr. Nansen, on "The Hydrography of the Polar Sea." At one of the sittings of the Congress a telegram was read from Mr. H. J. Mackinder, the Reader of Geography at Oxford, announcing that he had succeeded in reaching the summit of the hitherto unscaled Mount Kenia in British East Africa, and that some fifteen glaciers were found upon the mountain. It will be remembered that Mr. Mackinder left England in June last in charge of an exploring expedition.

A BUOY bearing the inscription "Andrée's Polar Expedition," found on the north side of King Charles Island, north-east of Spitsbergen, 80° latitude and 25° east of Greenwich, on September 11, has been brought to Stockholm and there opened in the presence of several experts and Ministers. It was found to be the so-called "North Pole buoy" which the explorer was to have dropped when passing the North Pole. So far as the examination extended no message from the explorer was revealed. Prof. Nathorst declared that the buoy could not have been carried from the Pole to King Charles Island, and Captain Svedenborg was of opinion that it had been thrown out empty. A search is, it is stated, to be made next year at King Charles Island.

A MARBLE bust of Prof. Emil Du Bois Reymond has been presented to the Physiological Institute of the University of Berlin by the professor's widow.

THE new Paris Institute of Biological Chemistry, facing the Pasteur Institute, towards the erection and endowment of which Baroness Hirsch gave 80,000*l.*, is now, so far as the exterior is concerned, completed.

PROF. R. BURCKHARDT, of Bâsle, and Prof. V. Uhlig, of Prague, have been elected members of the Academy of Sciences of Halle.

THE death is announced, at the age of forty-five, of Dr. Kowalowsky, professor of hygiene in the University of Warsaw, and of Canon Carnoy, professor of the natural sciences at the University of Louvain.

IN connection with the Glasgow Lecture Association a special science lecture will be given to school children during the Christmas holidays by Prof. McKendrick, F.R.S.

PROF. GEORG STEINDORFF, the director of the Aegyptologische Sammlung at Leipzig, has, it is stated, obtained leave of absence for six months to enable him to undertake a scientific journey to Africa.

DR. L. A. BAUER, of the U.S. Coast and Geodetic Survey, is at present in Europe for the purpose of inspecting various magnetic observatories and the comparison of the Coast and Geodetic Survey instruments with observatory standards.

THE announcement is made that Mr. W. H. Twelvetrees has been appointed geologist to the Government of Tasmania. During recent years Mr. Twelvetrees has devoted considerable attention to the geological formation of Tasmania, with special reference to mining operations, and has been a frequent contributor of papers to the Australian Institute of Mining Engineers and to the Royal Society of Tasmania.

THE Corporation of Glasgow has just appointed Dr. R. M. Buchanan bacteriologist to the city. He will devote the whole of his time to the duties of the office, and a laboratory has been assigned to him in the Sanitary Chambers.

IT is announced in the *Pioneer Mail* that Mr. Douglas Freshfield has arrived at Darjeeling, accompanied by two Swiss guides, intent on exploring the great snowfields of Kinchinjunga.

THE tenth International Congress of Hygiene and Demography will be held in Paris from August 9 to 17, 1900.

THE second International Congress on Hypnotism will be held in Paris from August 12 to 16, 1900, under the presidency of Dr. Jules Voisin. The questions proposed for discussion are: (1) The formation of a vocabulary concerning the terminology of hypnotism and the phenomena connected therewith; (2) the relations of hypnotism with hysteria; (3) the application of hypnotism to general therapeutics; (4) the indications for hypnotism and suggestions in the treatment of mental disease and alcoholism; (5) the application of hypnotism to general pædagogy and mental orthopædics; (6) the value of hypnotism as a means of psychological investigation; (7) hypnotism in relation to the (French) law of November 30, 1892, as to the practice of medicine; (8) suggestion and hypnotism in relation to jurisprudence; (9) special responsibilities arising from the practice of experimental hypnotism.

IN compliance with the request made by Russian men of science to the Russian imperial authorities, the scientific exploration of the coast-line of the Pacific in the Far East is to be undertaken. It has been arranged that a distinguished zoologist and member of the Imperial Russian Geographical Society shall undertake the exploration at the cost of the Society, in conjunction with the Ministry of Agriculture. The expedition intends to make investigations with a view to classifying the marine fauna and flora on the coast of the Russian territory, and the conditions of zoological life will also be investigated upon the Liao-Tong peninsula, and in the adjacent regions of Manchuria and Korea. The period for these investigations has been fixed at two years, and the cost of the expedition is estimated at 12,000 roubles. The Geographical Society has promised to make a grant of 7500 roubles towards this sum, and the Ministry of Agriculture and Imperial Domains will contribute the remaining 4500 roubles. The Ministry of Agriculture has been led to take a part in this expedition in the expectation that its results will be of great service in developing the coast industries of the Amur and the Island of Saghalien, and also in the districts which have been acquired lately by the Russian Government. The Geographical Society also entertains great hopes of the successful results of this expedition, in view of the fact that the previous expeditions sent by it to investigate the Black, Azov, and Marmora seas were particularly successful. The expedition to the Far East will work in conjunction with the Society for Exploring the Amur Territory, and intends to establish at Vladivostock a zoological station for studying the marine fauna of the district.

Science states that the late Richard B. Westbrook, of Philadelphia, has made a bequest of 10,000 dollars, taking effect on the death of his widow, to the Wagner Institute of Science. The sum is to be used as an endowment of a special lectureship to "secure the full and fearless discussion by the most learned and distinguished men and women in our own and other countries of mooted or disputed questions in science, and especially the theories of evolution."

A YEAR ago Cornell University secured 30,000 acres of woodland in the Adirondack Mountains for the exclusive use of the University's forestry department. The land has been divided into a number of sections, and several seed beds have been laid out in which there has been planted over a million small trees of different varieties. The students of forestry will study the theory of the subject from October to April, and from then until Commencement they will study the practical side of forestry. Cornell University is, according to the *Scientific American*, the only college in the United States which has a forestry department.

THE *Scientific American* states that the men of science who have been investigating the Wyoming fossil beds are having remarkable success, and a large number of boxes containing fossil remains have been sent to the State University, and the work of restoration will soon be begun under the direction of Prof. Wilbur C. Knight.

DURING this summer a number of field parties in connection with the United States Fish Commission have been engaged, in various States, in ichthyological and other investigations. A camping party under the direction of Dr. Charles H. Gilbert has, says *Science*, systematically examined the coastal streams of Oregon, with reference to their fish fauna; the eastern tributaries of the Sacramento have been visited by Mr. C. Rutter; a comprehensive study of the biological and physical features of the Wabash basin has been begun under the direction of Prof. B. W. Evermann; a party in charge of Mr. W. P. Hay has explored the Monongahela basin in West Virginia; Dr. P. H.

Kirsch has been collecting and studying the fishes of the San Pedro River, Arizona; in connection with the biological survey of Lake Erie, Prof. J. Reighard and assistants have cruised along the northern and southern shores of the lake in a special steamer; Dr. H. M. Smith has visited Seneca Lake, N.Y., for the purpose of determining the character of its fish fauna; a study of the variations of the mackerel of the east coast has been conducted by Mr. M. C. Marsh, and in the interesting Sebago and Cobbosseecontee lake regions of Maine, Dr. W. C. Kendall has made some special investigations regarding salmon and other fishes.

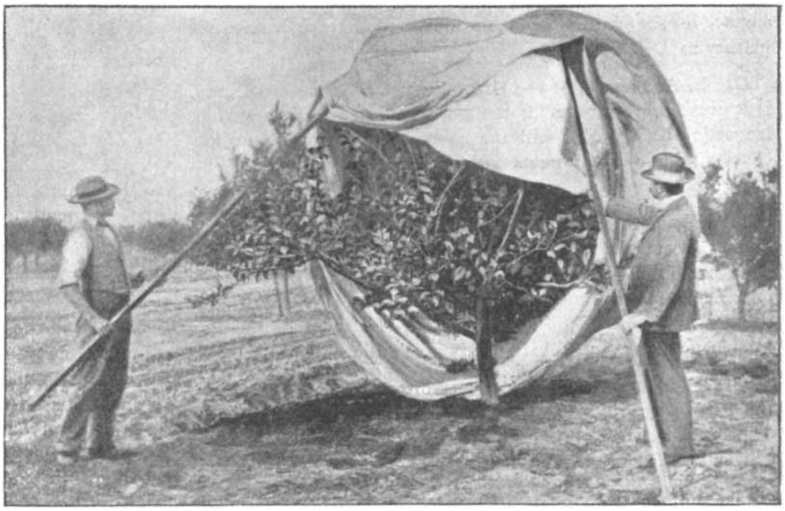
THE return of the schooner *Julia E. Whalen*, after an absence of nearly a year, is announced in *Science*. The vessel was sent out by Stanford University on a scientific cruise among the Galapagos Islands, &c., and carried members of a scientific expedition under the direction of R. E. Snodgrass, entomologist, and E. Heller, zoologist. A large collection of specimens, including birds, mammals, invertebrates, and fish, was obtained. On board the vessel were eighteen live land tortoises taken from Duncan and Albemarle Islands, some of them weighing four hundred pounds; also 220 fur sealskins and 2300 skins of hair seals.

A REMARKABLE demonstration of the success of inoculation against the plague is to be found in the statement recently made to the Indian Imperial Research Laboratory by Dr. Chinoy, the medical officer of the Southern Mahratta Railway at Hubli. In Hubli itself 4961 persons were inoculated once, 7840 persons twice, and 1346 persons thrice (these having been twice inoculated last year), or a grand total of 14,147. In the district 1849 persons were inoculated once, and 1967 twice, or altogether in Hubli and the district a total of 17,963 persons. In the words of Dr. Chinoy: "There are about 1000 people living in the railway chawl, Hubli, which was seriously infected last year. *All of them are inoculated*, and I am glad to be able to state that *not a single case of plague* has occurred amongst them since plague broke out in the town, although they freely move about and mix with people in the town, where plague is increasing daily."

THE report of the Imperial Bacteriologist at Calcutta for 1898–99 states that a considerable quantity of mallein and tuberculin are being manufactured in the laboratory for veterinary use. The hope is expressed that arrangements may be made for dairy and other cattle to be tested with tuberculin, so as to ascertain the extent of tuberculosis amongst cattle in India. Attention has been given to the further investigation of "surra," and the report says it is more than ever probable that this disease is identical with the South African tsetse-fly.

THE Vienna correspondent of the *Times* reports some experiments in a new system of telegraphy made in Budapest and Berlin on Friday last. These are alleged to have given the extraordinary result of a transmission of no fewer than 220 words in ten seconds without prejudicing the clearness of the message. According to the reports from Budapest, the impression made upon the technical experts who had an opportunity of following the trial was favourable. A perforated roll of paper, similar to that at present in use, is employed for the despatch of the message, which is made visible and fixed photographically at the receiving station. Instead of the dashes and dots of the Morse alphabet there are rising and falling strokes starting from a horizontal line. The receiver consists of a telephone fitted with a small concave mirror, upon which are reflected, in the form of streaks of light, the impulses marked on the membrane. By an ingenious arrangement, recalling in some respects that of the cinematograph, the streaks of light reflected upon the mirror are reproduced upon a roll of sensitised paper, thus giving a narrow oblong picture, which in the present stage of the invention is developed and fixed like any ordinary photograph.

THE fumigation of trees for the destruction of insect pests has for some time been extensively used in California and other parts of the United States. The process will probably soon come into use in New South Wales, for Mr. W. J. Allen describes in the *Agricultural Gazette* of the Colony some very successful experiments in spraying and fumigating for red and other scales on orange trees. The tree to be treated is completely covered with a tent, such as is shown in the accompanying illustration, and is subjected for nearly an hour to the fumes of hydrocyanic acid, produced by the combination of sulphuric acid and potassium cyanide. The number of men generally employed in a fumigating gang is four or five, according to the size of the trees. One man introduces the chemicals, another looks out for the generator and measures the acid, and two or three handle the tents. Such a gang can handle from thirty to forty medium-sized tents, and cover four to six acres of orchard in a night. Fumigation is to be preferred above spraying, because the trees are not in any way damaged by the fumes, except in the case of a few of the tender leaves, while the solution used in the sprays must to a certain extent close the pores of the tree and slightly weaken it.



Placing tent over tree to be fumigated.

ACCORDING to the *Engineer*, the signalling on the whole of the Pennsylvania Railroad system is now operated electrically. When a train passes a signal bridge it closes an electric circuit, which moves a signal semaphore to the "danger" position. When the train passes beyond the next bridge a circuit is opened, and the signal indicates that the block from which the train has just passed is clear. Finally, when the train passes beyond the third bridge, another signal arm on the same post drops, showing the driver of an approaching train that there is nothing on the next two blocks ahead.

THE connection between fleas and the permanency, or otherwise, of continents might not at first sight be very apparent, but, nevertheless, some important evidence on the latter point is afforded in a paper by the Hon. N. C. Rothschild published in *Novitates Zoologicae* for December last. In this contribution the author, who is making fleas his special study, describes a new species of those insects on the evidence of a single specimen from Argentina, which is believed to take up its abode on a rat. Now this Argentine flea, which is remarkable on account of the helmet-like shield covering the head, is provisionally assigned to a genus (Stephanocircus) hitherto represented by a single Australian species infesting the spotted dasyure (*Dasyurus maculatus*). And we presume it may be taken for granted that, whether or no they are rightly regarded as congeneric, the two species are evidently very closely allied. Now this being so, it is difficult to see how they reached their respective habitats except by means of a direct land connection between Australia and South America; and they accordingly serve to confirm the evidence afforded by the occurrence of the chelonian genus Miolania in both areas, to which attention has been recently drawn in these columns.

THE discovery of a new generic type of marine gastropod, represented by a species whose shell is over six inches in length, is such a rare event, that Mr. G. B. Sowerby's description of *Neptuneopsis gilchristi*, from the Cape seas, demands a brief notice. In general form the shell (which is described in the publications of the Cape Department of Agriculture for 1898) is so like some of the *Buccinidae*, such as *Neptunea* (*Chrysodomus*) that, were it not for its curiously swollen apex, it might be referred to the genus mentioned. On the other hand, the tricuspid tooth-ribbon, or radula, is of the characteristic volute type; and Mr. Sowerby consequently infers that the new genus should be placed in or near the *Volutidae*. If included therein, it will represent an interesting annectant, and therefore generalised type. The generic name selected scarcely seems to us a happy one.

THE close study of the smaller mammals of Europe on the lines followed by the American naturalists for those of their own country is gradually bringing to light the existence of numerous local races of species hitherto quite unsuspected. A remarkable instance of this is Mr. Barrett Hamilton's recognition of two new forms of mice from St. Kilda, which are described in the June number of the *Proc. Zool. Soc.* The first of these (*Mus hirtensis*) is nearly allied to the wood mouse (*M. sylvaticus*); while the second (*M. muralis*) is as closely related to the common house mouse. The former the author regards as indigenous to St. Kilda since the period when that island was connected with the mainland; while the latter he considers to have been derived from individuals of *M. musculus*, introduced by human agency not more than a few hundred years ago. Yet both differ from their mainland prototypes to the same degree; and thus indicate the different inherent variability of different species. The variation displayed by *M. muralis* is probably in the direction of the wild ancestor of *M. musculus*.

IN the *Indian Meteorological Memoirs*, vol. vi. part v., Mr. Eliot contributes a very important discussion of the air movement at Simla and in the Western Himalayas, deduced from anemometric observations recorded at Simla during four years ending August 1896. Some fifty years ago Sir Richard Strachey made a lengthened series of observations, chiefly in Kumaon, and in his description of the diurnal variation of the wind he considered the most important feature of the air movement in the Western Himalayas to be the up and down valley winds. Mr. Eliot's discussion entirely confirms this view. He states that the examination of the wind data from every point of view shows that the most important and unique feature of the air movement is the alternating currents between the hills and plains. He states that it is a permanent feature, independent of the change of seasons, and also of the air movement in the plains of Northern India, and is due to the changes of pressure vertically produced by the unequal expansion and contraction of the lower and middle strata of the atmosphere over the plains of Upper India and the Western Himalayan mountain zone.

THE *U.S. Monthly Weather Review* for June contains particulars of the increased usefulness of the Canadian Weather Service. For the year 1896 (the last published) the Report consists of two large quarto volumes, instead of one octavo volume published a year or two previously. During that year there were more than three hundred stations of observation of various classes. At the chief stations (eight in number), the telegraphic reporting stations, and a few of the special stations, the observers are paid, but the great bulk of observers are volunteers. There are thirty telegraphic stations, whose reports are received in Toronto before 9.30 a.m., and which, combined with fifty-four reports received by exchange from the United States, enable the director at Toronto, Prof. Stupart, to issue daily weather maps and forecasts similar to those published by other meteorological offices. The second volume is wholly taken up with details and results of the observations made at the eight chief stations. For each of these the Report gives for every hour and day the complete record of all the principal meteorological elements, in a form closely corresponding to that recommended for international meteorological publication of detailed observations. Prof. Cleveland Abbe's comment upon the work is that it is a noble contribution of data needed for the study of climatology in its relation to every matter that interests civilised humanity.

AN investigation of the emission and absorption of platinum-black and soot, and their dependency on the thickness of the layer employed, forms the subject of a paper by F. Kurlbaum in *Wiedemann's Annalen* (67). It would appear that both substances closely approach a black body in their behaviour towards waves of the length emitted by a black body at a temperature of 100°. For shorter waves the power of absorption increases. Both platinum-black and soot satisfy the Stefan-Boltzmann law when a sufficiently thick layer exists at high temperatures; and any deviations from this law are due to the radiating surface, or the bolometer being too thinly coated. Several further results of interest are found, and the author considers that for several reasons platinum-black is better than soot in all experiments.

IN the *Transactions* of the Institution of Mining Engineers, M. A. Rateau, Professor at the School of Mines, St. Etienne, describes experimental investigations on the theory of the Pitot tube and Woltmann mill, which are employed by engineers in gauging the rate of flow of air and water. Although the Pitot tube and mill and fan anemometers measure accurately the velocity of currents when these currents are uniform, they give, under opposite conditions which usually prevail, indications of the mean velocity which are always exaggerated, and are the more exaggerated the more marked the irregularity of the current itself. M. Rateau finds that the equation $v=a+bn+c/v$ which holds for low velocities in connection with such meters should, for velocities unrestricted in magnitude, be written in the form $bn=v-c/v-f(v)/v$, where $f(v)$ is a function of the resistance of the fluid with regard to which our knowledge is still somewhat deficient. In a note added later attention is drawn by the author to subsequent experiments by Mr. Epper, bearing on the same subject.

As there are insufficient data on the normal relations of voluntary movement to consciousness, Dr. R. S. Woodworth has set himself to this study, and his results are published as a monograph—"The Accuracy of Voluntary Movement"—in *The Psychological Review* (vol. iii. 1899). The following are some of his conclusions: When the eyes are used, the accuracy of a movement diminishes as the speed increases; but it does not vary so much when the eyes are not used; the right hand is slightly more accurate than the left. When the interval between successive movements is kept constant and the speed of the motion alone varied, the accuracy diminishes rapidly as the speed increases, the accuracy also diminishes on keeping the speed constant and varying the interval alone; the accuracy of initial adjustment is favoured by a short interval, accuracy of current control by a low speed; fatigue increases the variability of a performance, but practice decreases it, variability means improvability. Finally, the author advocates a new mode of writing, as he finds that the side to side movement of the wrist and forearm possesses advantages in point of ease and of speed over the usual thumb-and-finger movement, or a movement of the whole arm from the shoulder.

DR. MARIO BARATTA has contributed a preliminary sketch of his work on the Latian earthquakes to the *Rivista Marittima* for August. He shows that the more important shocks are connected with certain definite seismic centres, the positions of which he determines. An interesting comparison is made between the earthquakes of an extinct volcanic region, such as the Alban Hills, and those which precede, accompany and follow an eruption of an active volcano such as Etna. In both, the disturbed areas are as a rule extremely small, and yet near their centres the shocks may be strong enough to damage buildings. Also, in successive shocks, there are many changes in the positions of the epicentral areas.

M. A. DE GRAMONT sends a reprint of an article describing a method he has devised for varying the scale and dispersion of a laboratory spectroscope (*Comptes rendus*, vol. cxxviii., p. 1564, June 1899). The scale is adapted in the usual way by placing it at the end of a collimator tube and arranging that the light from the scale shall be reflected from one face of the prism into the observing telescope; but instead of having only one lens in the scale tube, fixed at its principal focus from the scale, there are two lenses there, whose distances from each other and from the scale can be varied by known amounts. It will be at once apparent that the effect of this will be to alter the magnification of the scale as seen in the observing telescope, and in practice the scale is so altered that a certain number of divisions always correspond to the distances between the same two spectrum lines, whatever kind of prism or dispersive arrangement is being used. The variation in the dispersion is obtained in a well-known but little used manner, by rotating the prism about its refracting edge, and using positions more or less removed from that of minimum deviation, the dispersion being increased or decreased accordingly as the prism is turned towards the collimator or telescope from the mean position. A useful diagram is given bringing together the various effects on the dispersion by gradual displacements of the prism. The author is investigating more closely the variation of dispersion with the angle of incidence, and will communicate results later.

AN observation of some interest in connection with recent discussions on heredity is recorded by M. Casimir de Candolle in a paper read before the *Société de physique et d'histoire naturelle de Genève*. He points out a constant difference between the normal and the adventitious buds of trees. The latter he regards as new individuals of the same species as the tree from which they spring, or as apogamic embryos, while the former are simply organs for prolonging the life of the individual. It is quite common for the first leaves of a woody plant to differ in form or structure from the later leaves. Examples are given in *Eucalyptus globulus*, the walnut, the horse-chestnut, and the hornbeam. In all these cases the first leaves from adventitious buds resemble, not those from normal buds, but the first leaves of the young plant.

A SECOND edition of Dr. M. M. Richter's tables of carbon compounds is in course of publication by the firm of Leopold Voss, Hamburg and Leipzig (London: Williams and Norgate), under the revised title of "Lexikon der Kohlenstoff-Verbindungen." How tremendous has been the advance in the knowledge of carbon compounds since the original work appeared may be judged by the fact that the total number of compounds registered in the new edition is 67,000, as compared with 16,000 known in 1883. The work will be an index to Beilstein's handbook of organic chemistry, for all the compounds—about 57,000—contained in Beilstein are dealt with. Papers published up to the end of last year have been used in the preparation of the volume, and it is intended to publish annual supplements in order to keep the work up to date. The "Lexikon" will be completed in about thirty-five parts, twelve of which have been issued.

MESSRS. WHITTAKER AND CO. have published a second edition, thoroughly revised, of "An Introductory Course of Practical Magnetism and Electricity" by Mr. J. Reginald Ashworth. The book contains an admirable course of experimental work suitable for students in "Schools of Science" and other institutions where physics is taught by laboratory practice. A number of new illustrations have been added to assist students to understand descriptions of experiments.

CALENDARS, for the session 1899–1900, have reached us from the Merchant Venturers' Technical College, Bristol, and the Birkbeck Institution, London, in each of which all necessary information is to be found as to the various activities in connection with the two institutions. We notice that at the Merchant Venturers' College certain extensions and improvements have recently taken place; *e.g.* a new optical laboratory has been opened in connection with the Department of Applied Physics and Electrical Engineering, the amount of space available for the dynamo and testing-room has been doubled, and a battery, &c., have been added to the equipment. In addition to these, other changes have either taken place or are in progress.

TWO articles of scientific interest are to be found in the current issue of the *Humanitarian*—one, by Mr. E. W. Brabrook, entitled "Anthropology, 1863–1899"; the other, by Dr. D. Somerville, on "The Rise of Bacteriology." Each gives in brief outline some idea as to what has been accomplished in the two branches of science. A reproduction of a striking photograph of Mr. Brabrook forms a frontispiece to the number.

WE are asked to say that the lectures to young people, referred to in the last issue of NATURE, p. 538, are to be delivered by Mr. Cecil Carus-Wilson during the months of October and November, and not as was stated.

THE additions to the Zoological Society's Gardens during the past week include five Barbary Turtle Doves (*Turtur risorius*) from Africa, presented by Mrs. J. A. Moore; one Ruffed Lemur (*Lemur varius*) from Madagascar, two Westermann's Eclectus (*Eclectus westermanni*) from Moluccas, a Two-spotted Paradoxure (*Paradoxurus binotata*) from West Africa, a Rufous Tinamon (*Rhynchotus rufescens*) from Brazil, a Grey Ichneumon (*Herpestes griseus*) from India, four Blanding's Terrapins (*Emys blandingi*) from North America, deposited; a Black-necked Swan (*Cygnus nigricollis*) from Antarctic America, a Hoopœ (*Upupa epops*), two Sandpipers (*Tringoides hypoleucus*), European, two Lanceolated Jays (*Garrulus lanceolatus*) from the Himalayas, purchased.